



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
04.09.2019 Bulletin 2019/36

(51) Int Cl.:
B60K 28/06 ^(2006.01) **B60W 30/10** ^(2006.01)
B60W 30/14 ^(2006.01) **A61B 5/18** ^(2006.01)
B60W 50/10 ^(2012.01) **B60W 30/182** ^(2012.01)

(43) Date of publication A2:
29.05.2019 Bulletin 2019/22

(21) Application number: **18204080.8**

(22) Date of filing: **02.11.2018**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(71) Applicant: **Mando Corporation**
Gyeonggi-do 451-821 (KR)
(72) Inventor: **SIM, Sang Kyun**
14063 Dongan-gu, Anyang-si, Gyeonggi-do (KR)
(74) Representative: **Pfenning, Meinig & Partner mbB**
Patent- und Rechtsanwälte
Joachimsthaler Straße 10-12
10719 Berlin (DE)

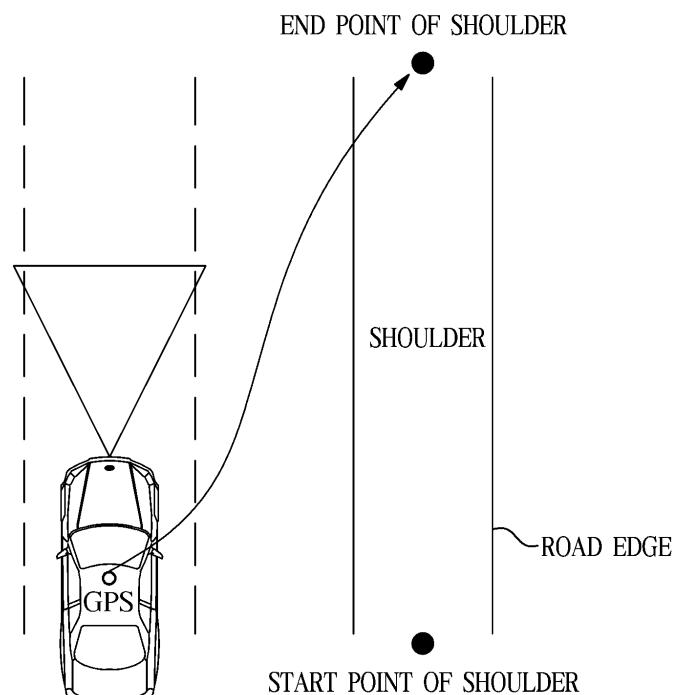
(30) Priority: **03.11.2017 KR 20170146215**

(54) **METHOD FOR CONTROLLING VEHICLE BASED ON CONDITION OF DRIVER**

(57) A method for controlling a vehicle based on a driver status is disclosed. The vehicle includes various sensing devices (including a camera, a vehicle dynamics sensor, a vehicle around view monitoring (AVM) camera, a periphery surveillance sensor, and a navigation device) and an electronic control unit (ECU). The ECU may an-

alyze a driver status through the driver's face and pupils recognized by output signals of the sensing devices. If the driver has no intention to drive the vehicle, the ECU may control the vehicle to stop on a road shoulder, resulting in guarantee of safer driving.

[FIG. 4]





EUROPEAN SEARCH REPORT

Application Number
EP 18 20 4080

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 10 2011 086241 A1 (BOSCH GMBH ROBERT [DE]) 16 May 2013 (2013-05-16) * paragraphs [0007], [0016], [0019], [0035], [0036], [0040] - [0043] * * the whole document *	1-9	INV. B60K28/06 B60W30/10 B60W30/14 A61B5/18 B60W50/10 B60W30/182
Y	EP 2 657 921 A1 (VOLKSWAGEN AG [DE]) 30 October 2013 (2013-10-30) * paragraphs [0025] - [0029], [0036] * * the whole document *	1-9	
Y	DE 10 2015 220356 A1 (BOSCH GMBH ROBERT [DE]) 20 April 2017 (2017-04-20) * paragraphs [0017], [0024], [0025], [0040] * * the whole document *	1-9	
Y	DE 198 03 158 C1 (DAIMLER CHRYSLER AG [DE]) 6 May 1999 (1999-05-06) * column 3, line 29 - column 4, line 59; figures 1,2 * * column 5, line 47 - column 6, line 18 * * the whole document *	1-9	TECHNICAL FIELDS SEARCHED (IPC) B60K B60W A61B
<p>The present search report has been drawn up for all claims</p>			
Place of search Munich		Date of completion of the search 27 March 2019	Examiner Plenk, Rupert
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)



Application Number

EP 18 20 4080

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-9

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 18 20 4080

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-9

method for controlling a vehicle when a driver status is considered abnormal, based on images taken of a driver's face and pupils

2. claims: 10-14

method for controlling a vehicle when a driver status is considered normal, based on analyzing the driver's pupils and their movements. Claims 11 to 14 depend directly or indirectly on claim 10.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 20 4080

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-03-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102011086241 A1	16-05-2013	CN 104136260 A	05-11-2014
		DE 102011086241 A1	16-05-2013
		EP 2780184 A1	24-09-2014
		US 2015006012 A1	01-01-2015
		WO 2013072095 A1	23-05-2013

EP 2657921 A1	30-10-2013	DE 102012008090 A1	24-10-2013
		EP 2657921 A1	30-10-2013

DE 102015220356 A1	20-04-2017	NONE	

DE 19803158 C1	06-05-1999	DE 19803158 C1	06-05-1999
		EP 0933743 A2	04-08-1999
		JP H11316884 A	16-11-1999
		US 6097295 A	01-08-2000
